STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

Phone: 860-594-3128

August 10, 2016

Project No. 301-170; Noroton Heights Railroad Station Platform Replacement in the Town of Darien.

NOTICE TO CONTRACTORS:

This is to notify all concerned and especially the prospective bidders that the bid opening for the subject project is currently scheduled for August 24, 2016 at 2:00 P.M. in the Conference Room of the Department of Transportation Administration Building, 2800 Berlin Turnpike, Newington, Connecticut.

Addendum No. 1 is attached

This Addendum is necessary to revise contract documents.

Pre-Bid Questions and Answers: Questions pertaining to DOT advertised construction projects must be presented through the CTDOT Pre-Bid Q and A Website. The Department cannot guarantee that all questions will be answered prior to the bid date.

Philip J. Melchionne
For: Gregory D. Straka
Contracts Manager
Division of Contracts Administration

AUGUST 9, 2016
NOROTON HEIGHTS RAILROAD STATION PLATFORM REPLACEMENT
FEDERAL AID PROJECT NO. N/A
STATE PROJECT NO. 301-170
TOWN OF DARIEN

ADDENDUM NO. 1

This Addendum addresses the following questions and answers contained on the "CT DOT QUESTIONS AND ANSWERS WEBSITE FOR ADVERTISED CONSTRUCTION PROJECTS":

Question and Answer Nos. 1, 2, 3, 4, 5, 6, 7, 8 and 10.

SPECIAL PROVISIONS

NEW SPECIAL PROVISIONS

The following Special Provisions are hereby added to the Contract:

- SECTION 1.20 – GENERAL CLAUSES FOR FACILITIES CONSTRUCTION
- ITEM NO. 0601196A – VARIABLE DEPTH PATCH
- ITEM NO. 0601954A – EPOXY INJECTION CRACK REPAIR
- ITEM NO. 0969064A – CONSTRUCTION FIELD OFFICE, LARGE

REVISED SPECIAL PROVISIONS

The following Special Provisions are hereby deleted in their entirety and replaced with the attached like-named Special Provisions:

- NOTICE TO CONTRACTOR – EARLY SUBMITTALS
- NOTICE TO CONTRACTOR – SUBMITTALS
- ITEM NO. 0901005A – BOLLARD

CSI SPECIFICATIONS

REVISED CSI FORMATTED SPECIFICATION

The following CSI Formatted Specification is hereby deleted in its entirety and replaced with the attached like-named CSI Formatted Specification:

- INDEX OF CSI FORMATTED SPECIFICATIONS

DELETED CSI FORMATTED SPECIFICATIONS

The following CSI Formatted Specifications are hereby deleted in their entirety:

- 03 31 05 – VARIABLE DEPTH PATCH
- 03 31 10 – EPOXY INJECTION CRACK REPAIR

CONTRACT ITEMS

NEW CONTRACT ITEMS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0601196A	VARIABLE DEPTH PATCH	C.F.	55
0601954A	EPOXY INJECTION CRACK REPAIR	L.F.	275
0969064A	CONSTRUCTION FIELD OFFICE, LARGE	MO.	24

REVISED CONTRACT ITEMS

ITEM NO.	DESCRIPTION	ORIGINAL QUANTITY	REVISED QUANTITY
0406172	HMA S0.375	60 TON	13 TON
1220027	CONSTRUCTION SIGNS	169 S.F.	319 S.F.

DELETED CONTRACT ITEMS

ITEM NO.	DESCRIPTION	ORIGINAL QUANTITY	REVISED QUANTITY
0202502	REMOVAL OF CONCRETE PAVEMENT	133 S.Y.	0
0969062A	CONSTRUCTION FIELD OFFICE, MEDIUM	24 MO.	0

PLANS
REVISED PLANS
The following Plan Sheets are hereby deleted and replaced with the like-numbered Plan Sheets:

02.01.A1
03.01.A1
03.03.A1
05.02.A1
05.09.A1
05.18.A1
05.19.A1
05.22.A1
05.23.A1
05.24.A1
05.25.A1
05.26.A1
05.32.A1

The Bid Proposal Form has been revised to reflect these changes.

There will be no change in the number of calendar days due to this Addendum.

The foregoing is hereby made a part of the contract.

SECTION 1.20 – GENERAL CLAUSES FOR FACILITIES CONSTRUCTION

1.20-1.05.02—Shop Drawings, Product Data, Product Samples and Quality Assurance Submittals: *Delete the Article in its entirety and replace with the following:*

1.20-1.05.02— Contractor Submittals:

1. General: If the plans prepared by the Department do not show complete details, they will show the necessary dimensions and preliminary details, which when used along with the other Contract documents, will enable the Contractor to prepare submittals necessary to complete the Contract work.

The Contractor is required to prepare submittals as Portable Document Format (PDF) files using Bluebeam Revu.

The Contractor is also required to acquire and maintain access to the Department's Bentley ProjectWise data management system portal. The minimum recommended internet speed is 25MB/sec. For reference, the Department's internet speed is 1 GB/sec.

The Contractor shall submit a "CT DOT ProjectWise – New User Form" to request user names and passwords. The Department will permit Web-based access and no more than 2 users for the Contractor.

The entry/log-in procedure is described in Section 3.2 of the CT DOT Digital Project Development Manual.

2. Submittal Preparation and Processing: The Contractor shall:

(a) Coordinate preparation and processing of submittals with performance of construction activities;

(b) Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay;

(c) Coordinate each submittal with fabrication, purchasing, testing, delivery, and other submittals and related activities that require sequential activity;

(d) Provide complete submittal packages as multi-page PDF's (Working Drawings, Shop Drawings, Product Data, Product Samples, and Quality Assurance Submittals, as applicable) for related elements of Project work for a concurrent review of all information. Incomplete submittal packages will be returned to the Contractor without being reviewed. Electronic PDF packages shall be limited to 75 MB unzipped; larger PDF packages will need to be broken up.

The Contractor shall allow at least 21 calendar days for initial submittal review by the submittal reviewer, and allow additional time for such review if processing must be delayed to permit coordination with subsequent submittals. If a subsequent submittal is necessary, the Contractor shall allow at least 21 additional calendar days for processing each subsequent submittal. The submittal reviewer reserves the right to withhold action on a submittal if coordination with other submittals is necessary, until all related submittals are received. The submittal reviewer will promptly inform the Contractor when a submittal being processed must be delayed for such

coordination.

The Contractor shall allow at least 28 calendar days for outside agency review of any submittal requiring their approval, including but not limited to the following: any utility, FTA, any railroad, DEEP, U.S. Coast Guard, Army Corps of Engineers, FM Global, and any Commissioning Authority.

The Engineer will not authorize an extension of Contract time because of the Contractor's failure to transmit submittals to the submittal reviewer or outside agencies sufficiently in advance of the work to permit processing.

The Contractor shall be limited to one acceptable submittal per product. Once a product has been accepted either as originally specified, or as an "Or Equal" to the product specified, the Contractor may elect to submit a subsequent product for consideration, but the Contractor shall be required to reimburse the Department for all costs associated with reviewing the subsequent request.

The Contractor shall attach a Submittal Transmittal Form to the beginning of each PDF submittal package. A blank Submittal Transmittal Form is located in ProjectWise "01.0 – Projects-Active" under the subfolder "120_Contractor_Submittals (PDF)" under the project number main folder. This form will be used for the Contractor to digitally certify that "Having reviewed this submittal, I certify that it is complete, accurate, coordinated in all aspects of the item being submitted and conforms to the requirements of the Contract in all respects, including all Federal requirements such as "Buy America", except as otherwise noted." The digital certification process is detailed in Section 2 of the CT DOT Digital Project Development Manual.

3. Transmittal of Submittals: The digitally certified PDF submittal package shall be uploaded into ProjectWise "01.0 – Projects-Active" under the subfolder "120_Contractor_Submittals (PDF)" under the project number main folder. The upload process is detailed in Section 3.2.1-3 of the CT DOT Digital Project Development Manual. The submittal reviewer will not act on submittals received in any other manner.

The Contractor shall attribute the submittal packages in ProjectWise using the following the following attributes and naming conventions:

a) Discipline: CTR
b) Main Category: CONTRACTOR
c) Sub Category: SUBMITTAL
d) Label: "XXX-Spec Reference-##"
   "XXX" is the chronological submittal number created by the Contractor starting at 01
   For individual Contract Items: "Spec Reference" is the 7-digit Contract Item No. (No "A" shall be included), or for the Major Lump Sum Item (MLSI) Item: "Spec Reference" is the 6-digit CSI Section Number preceded by a "C" (making it a total of 7 digits). No submittals will be accepted using the 7 digit item number for the MLSI
   "Submittal #" is 01, 02, 03, etc.
e) Description: Brief description of submittal content.

The first submission for a particular item is the "01" submittal. Subsequent resubmittals (02, 03, etc.) are transmitted as described above only for those submittals or portions thereof returned to the Contractor with a "Revise and Resubmit" or "Rejected" disposition. The chronological submittal number shall not be revised on a resubmittal.

After uploading an initial or subsequent submittal, the Contractor shall provide e-mail notification to submittal reviewers and other key personnel at their business e-mail address that the submittals have been uploaded and are available for review. The Contractor shall provide a web link to the PDF submittal within their e-mail notification. The Contractor shall include the following information in the notification e-mail subject line in this order: project number, item number, item description, and submittal # (e.g. 01, 02, 03, etc.). The submittal review time begins when the submittal reviewer is notified by e-mail.

4. Submittal Schedule: At the Pre-Construction Meeting, the Contractor shall submit the initial submittal schedule. The initial submittal schedule will include all submittals required during the first 60 calendar days of construction, all submittals required to maintain orderly progress of the Work, and all submittal required early because of long lead time for manufacture or fabrication.

Following the Engineer's response to the initial submittal, the Contractor shall provide copies of the schedule to the Engineer, Designer, the Contractor's subcontractors, and other parties required to comply with submittal dates indicated.

The Contractor shall submit the complete submittal schedule within 60 calendar days of the Notice to Proceed.

The Contractor shall update its submittal schedule once a month and distribute and post each updated schedule in the manner described above.

The submittal schedule shall be organized in numerical order by special provision number and by CSI-formatted specification section number. The Contractor shall include (1) time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates; and (2) additional time required for making corrections or revisions to submittals noted by Designer or Engineer and additional time for handling and reviewing submittals required by those corrections. The Contractor shall coordinate submittal schedule with its subcontracts, the schedule of values, and their construction schedule.

5. Working Drawings (Delegated Design Submittals): When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and submit working drawings, signed, sealed and dated by a qualified Professional Engineer licensed to practice in the State of Connecticut, for review.

There will be no direct payment for furnishing any working drawings, procedures or supporting calculations, but the cost thereof shall be considered as included in the general cost of the work.

a. Working Drawings for Permanent Construction: The Contractor shall submit drawings to the Designer on 22 in x 34 in sheets with a border and title block similar to the Department standard. Each drawing shall be a separate PDF file. Drawings shall be searchable. The first

drawing shall include the Contractor's designer's Professional Engineer's digital signature, meeting the requirements of Adobe's Certified Document Services (CDS), and all other drawings shall include a watermark of the Professional Engineer's stamp in a common area of the border. Calculations, procedures and other supporting data may be submitted in an 8-1/2 in x 11 in format and shall be in a single PDF file. The first sheet of calculations shall include the Contractor's designer's Professional Engineer's digital signature, meeting the CDS requirements, Documents shall be named "Drawings," "Calculations," or "Supporting Documentation" as applicable.

The Contractor's designer, who prepares the working drawings, shall secure and maintain at no direct cost to the State a Professional Liability Insurance Policy for errors and omissions in the minimum amount of $2,000,000 per error or omission. The Contractor's designer may elect to obtain a policy containing a maximum $250,000 deductible clause, but if the Contractor's designer should obtain a policy containing such a clause, they shall be liable to the extent of at least the deductible amount. The Contractor's designer shall obtain the appropriate and proper endorsement of its Professional Liability Policy to cover the indemnification clause in this Contract, as the same relates to negligent acts, errors or omissions in the Project work performed by them. The Contractor's designer shall continue this liability insurance coverage for a period of (1) 3 years from the date of acceptance of the work by the Engineer, as evidenced by a State of Connecticut, Department of Transportation Form Number CON-500, entitled "Certificate of Acceptance of Work," issued to the Contractor; or (2) 3 years after the termination of the Contract, whichever is earlier, subject to the continued commercial availability of such insurance. The Contractor shall supply to the Assistant District Engineer a certificate of insurance in accordance with Article 1.03.07 at the time that the working drawings for the Project are submitted.

b. Working Drawings for Temporary Construction: The Contractor shall submit drawings, calculations, procedures and other supporting data to the Assistant District Engineer in a format acceptable to the Assistant District Engineer.

c. Working Drawings for Permanent Construction: Drawings shall be submitted to the Designer on 22 in x 34 in sheets with a border and title block similar to the Department standard. Each drawing shall be a separate PDF file. Drawings shall be searchable. The first drawing shall include the Contractor's designer's Professional Engineer's digital signature, meeting the requirements of Adobe's Certified Document Services (CDS), and all other drawings shall include a watermark of the Professional Engineer's stamp in a common area of the border. Calculations, procedures and other supporting data may be submitted in an 8-1/2 in x 11 in format and shall be in a single PDF file. The first sheet of calculations shall include the Contractor's designer's Professional Engineer's digital signature, meeting the CDS requirements, Documents shall be named "Drawings," "Calculations," or "Supporting Documentation" as applicable.

6. Shop Drawings: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and submit shop drawings for review. Drawings shall be submitted on 22 in x 34 in sheets with an appropriate border and with a title block in the lower right-hand corner of each sheet. Each drawing shall be a separate PDF file. Drawings shall be searchable.

Shop Drawings consist of fabrication and installation drawings, roughing-in and setting drawings, schedules, patterns, templates and similar drawings, and wiring diagrams showing field-installed wiring, including power, signal, and control wiring. Standard information prepared without specific reference to the Project shall not be considered to be a Shop Drawing.

Shop Drawings shall be project specific.

Shop drawings shall include the following information: Contract number, Project description, number and title of the drawing, date of drawing, revision number, name of Contractor and subcontractor submitting drawings, dimensions, identification of products, shop work manufacturing instructions, design calculations, statement of compliance with Contractual standards, notation of dimensions established by field measurement, notation of coordination requirements, relationship to adjoining construction clearly indicated, seal and signature of a professional engineer if specified, and any other information required by individual Contract provisions.

There will be no direct payment for furnishing any shop drawings, procedures or supporting calculations, but the cost thereof shall be considered as included in the general cost of the work.

7. Coordination Drawings: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and submit coordination drawings for review. Each drawing shall be a separate PDF file. Drawings shall be searchable.

The Contractor shall prepare coordination drawings according to requirements in other Contract provisions, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

Coordination Drawings shall include Project-specific information drawn accurately to a scale large enough to indicate and resolve conflicts. Coordination Drawings shall not be based on standard printed data. Coordination Drawings shall include the following information, as applicable: (1) use applicable plans as a basis for preparation of Coordination Drawings and prepare sections, elevations, and details as needed to describe relationship of various systems and components; (2) coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review; (3) indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems; (4) indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation; (5) show location and size of access doors required for access to concealed dampers, valves, and other controls; (6) indicate required installation sequences; (7) indicate dimensions shown on the plans, specifically noting dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements, and (8) provide alternate sketches to the Designer indicating proposed resolution of such conflicts.

There will be no direct payment for furnishing any coordination drawings, but the cost thereof shall be considered as included in the general cost of the work.

8. Product Data: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and submit product data for review in a PDF file.

The Contractor shall provide all product data in a single submittal for each element of construction or system and shall mark each submittal with the Contract item number.

The Contractor shall mark each copy of a product data submittal to show applicable choices and options. Where product data includes information on several products that are not required, copies shall be marked to indicate the applicable information. Product data shall include the following information and confirmations to the extent applicable: manufacturer's printed recommendations, compliance with recognized trade association standards, compliance with recognized testing agency standards, application of testing agency labels and seals, notation of coordination requirements, and any other information required by the individual Contract provisions.

There will be no direct payment for furnishing any product data, but the cost thereof shall be considered as included in the general cost of the work.

9. Product Samples: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and submit product samples for review.

Product Samples are samples submitted for review and action by the Designer, which are: (1) physically identical to the proposed product or material cured and finished as required by the Contract; or (2) submitted for review of kind, color, pattern, thickness, and texture. Samples shall be used for a final check of these characteristics with other elements, and for a comparison of the characteristics of the approved sample with those of the actual component as delivered and installed.

The following information shall be submitted with product samples to the extent applicable: Contract number; Project description; generic description of the sample (name or trade reference, type or quality or grade, and any further designation necessary to identify the items or materials); sample source; product name; manufacturer's name; confirmation of availability; and anticipated delivery time.

In conjunction with the submission of physical product samples, a digital photograph of the sample shall be uploaded into ProjectWise.

The Designer will retain one set of the samples, transmit one set of same to the Engineer, and transmit any remaining sets of samples to the Contractor. The Engineer will retain the samples at the Project site for quality comparisons throughout the duration of the Project.
There will be no direct payment for furnishing any product samples, but the cost thereof shall be considered as included in the general cost of the work.

10. Quality Assurance Submittals: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and submit quality assurance submittals for review in a PDF file.

Quality assurance submittals consist of qualification data, design data, certifications, manufacturer's instructions, manufacturer's field reports, test reports, Material Safety Data Sheets

(MSDSs), and other quality assurance information required by individual Contract provisions.

Where Contract provisions require certification that a product, material, or installation complies with specified requirements, the Contractor shall submit a notarized certification from the manufacturer certifying said compliance. An officer of the manufacturer or other individual authorized to sign documents on behalf of the company shall sign the certification.

Where Contract provisions require the Contractor shall provide a certification letter on the manufacturer's letterhead to certify that asbestos is not contained in the materials. The manufacturer certification letter shall be formatted in the following manner:

[Addressed to:] Commissioner of Transportation
Department of Transportation
P.O. Box 317546
Newington, Connecticut 06131-7546

Project Title and Number

[We] hereby certify that all materials manufactured by [Insert Manufacturer Name] are asbestos-free.

[Signature:] [Name of authorized signatory]
[Title]

Submittals associated with these materials will not be reviewed without the required manufacturer certification letter.

There will be no direct payment for furnishing any quality assurance submittals, but the cost thereof shall be considered as included in the general cost of the work.

11. Submittal Reviewer's Action: The Designer or Engineer will review each submittal, mark each with a uniform, self-explanatory action stamp, and return the stamped submittal promptly to the Contractor. The stamp will be marked as follows to indicate the action taken:

(a) If submittals are marked "No Exceptions Noted," the submittal reviewer has not observed any statement or feature that appears to deviate from the Contract requirements. This disposition is contingent on being able to execute the manufacturer's written warranty in compliance with the Contract provisions.

(b) If submittals are marked "Exceptions as Noted," the considerations or changes noted by the Designer or Engineer are necessary in order for the submittal to comply with Contract requirements. This disposition is contingent on being able to execute the manufacturer's written warranty in compliance with the Contract provisions.

(c) If submittals are marked "Revise and Resubmit," the Contractor shall revise and resubmit the submittal to address the deficiencies or provide additional information requested by the Designer

or Engineer.

(d) If submittals are marked "Rejected," the Contractor shall prepare and submit a new submittal in accordance with the Designer's or Engineer's notations.

(e) If submittals are primarily for information or record purposes, the Designer will return the submittal marked "No Action Required." This disposition is contingent on being able to execute the manufacturer's written warranty in compliance with the Contract provisions.

Upon completion of the review, the submittal reviewer will notify the Contractor by e-mail that the submittal dispositions are available in ProjectWise.

The Contractor shall not proceed with the part of the Project covered by the submittal until the submittal is marked "No Exceptions Noted" or "Exceptions as Noted" by the Designer or the Engineer. The Contractor shall retain sole responsibility for compliance with all Contract requirements.

The Contractor shall print 2 copies through ProjectWise of each submittal marked "No Exceptions Noted" or "Exceptions as Noted" to the Assistant District Engineer for use by the Engineer within 7 calendar days of the Contractor's receipt of the submittal reviewer's e-mail. The Contractor shall not perform physical work related to the submittal until the 2 copies are provided to the Assistant District Engineer.

The Contractor shall mark up one set of shop drawings and one set of working drawings and retain them as a "Record Document."

Maintenance manuals and warranties will not be returned unless they are Rejected."

ITEM #0601196A – VARIABLE DEPTH PATCH

Description: Work under this item shall consist of removing loose, deteriorated concrete and concrete overlaying hollow areas and applying a cementitious mortar to these areas as well as spalled and scaled areas as shown on the plans, as directed by the Department, and in accordance with these specifications.

Materials:

The cementitious mortar shall be one of the following:

5 Star Structural Concrete V/O
Manufactured by:
U.S. Grout Corp.
401 Stillson Road
Fairfield, CT 06430

Re-crete 20 Minutes Set
Manufactured by:
Dayton Superior Corp.
3 Horne Drive
Folcroft,PA 19032

Masterpatch 230 VP
Manufactured by:
Master Builders, Inc.
23700 Chagrin Boulevard
Cleveland, OH 44122

The single component zinc primer shall be one of the following:

Kolor-Zinc No. 0100
Manufactured by:
Keeler & Long, Inc.
856 Echo Lake Road
Watertown, CT 06795

Zinc Plate 49 Organic Primer Type 2
Manufactured by:
Con-Lux Coatings, Inc.
Talmadge Road, Box 847
Edison, NJ 08818

Carboline 676
Manufactured by:
Carboline
350 Hanley Industrial Court
St. Louis, MO 63144

Certification: A Materials Certificate and Certificate of Compliance shall be required for the Cementitious mortar and the zinc primer in accordance with Article 1.06.07, certifying the conformance of this material to the requirements started herein.

Construction Methods: Before any concrete is removed, the Department shall perform an inspection to determine the exact limits and locations of all areas to be repaired.

The perimeter of each deteriorated area shall be squared up to a minimum of ½-inch deep by chiseling or sawcutting.

In areas where reinforcing steel is found to be surrounded by deteriorated concrete or has at least one-half its surface area exposed or has less than 1" cover, the depth of removal shall be such as to include all deteriorated concrete but not less than ¾" around the reinforcing steel.

Loose and deteriorated concrete and hollow areas shall be chipped away back to sound concrete. The exposed concrete surfaces shall be thoroughly sandblasted and vacuumed immediately prior to applying the mortar.

Hollow areas in the existing concrete shall be completely exposed by chipping away back to sound concrete and thoroughly sandblasted and vacuumed immediately prior to applying the mortar.

Care shall be taken not to cut existing reinforcing.

Spalled and scaled areas shall be cleaned of all loose and deteriorated concrete. The exposed surfaces shall be thoroughly sandblasted and vacuumed immediately prior to applying mortar.

All surfaces of exposed concrete and reinforcing steel shall be free of oil, solvent, grease, dirt, dust, bitumen, rust, loose particles, and foreign matter. Prior to sandblasting of the concrete and steel surfaces, all petroleum contamination on these surfaces shall be removed by an appropriate solvent or detergent cleaning operation.

All compressed air equipment used in cleaning shall have properly sized and designed, attached and functional, oil separators to assure the delivery of oil-free air at the nozzle.

Extreme care shall be taken, where reinforcing steel is uncovered, not to damage the steel or its bond in the surrounding concrete. At substructure locations, pneumatic tools shall not be placed in direct contact with reinforcing steel. Maximum 30# size hammers shall be used for general chipping and removal while maximum 15# size shall be used behind reinforcing steel. Exposed reinforcing steel shall be sandblasted in accordance with SSPC-SP-6, Commercial Blast Cleaning, to remove all contaminants, rust and rust scale.

The exposed blast cleaned reinforcing steel shall be coated with the single component zinc primer brush. All application of the zinc primer shall be in accordance with the manufacturer's printed instructions.

If the existing reinforcing steel is severely corroded or damaged, the Department shall be notified immediately.

Adequate measures shall be taken by the Contractor to prevent concrete chips, tools and/or materials from dropping into the river. When using sandblasting equipment, all work shall be

shielded to prevent debris from falling into the river. Debris from sandblasting shall be collected, removed, and satisfactorily disposed of by the Contractor from the site.

All mixing and application of the mortar shall be done in strict accordance with the printed instructions supplied by the manufacturer and as directed by the Department.

At the same time of mortar application, the concrete surfaces against which this material is to be placed shall be sound, tight, and thoroughly roughened by the removal and sandblasting procedures specified above. The exposed concrete surfaces shall be dampened with fresh water (saturated surface dry) immediately prior to placement of the mortar. The minimum ambient and patch area surface temperatures shall be 45^{o}F and rising at the time of mortar application.

The mortar shall be packed into the substrate, filling all pores and voids, then forced against the edges of the repair, working toward the center. After filling the voids, the mortar shall be compacted and the surfaces finished with a trowel to match the original contours of the existing concrete or to the specified build-out as detailed on the plans.

A fine spray mist of water shall be used to aid the cure of the patches by preventing the surface from drying for a minimum of 2 hours.

Cured patches shall be sounded by the Department to detect the presence of any hollow areas. Such areas shall be removed and replaced by the Contractor at his own expense until an acceptable patch is in place.

Method of Measurement: This work will be measured by the number of cubic feet of cementitious mortar incorporated into the completed and accepted work.

Basis of Payment: This work will be paid for as outlined in Part 2 Technical Provisions.

Pay Item	Pay Unit
VARIABLE DEPTH PATCH	C.F.

ITEM #0601954A– EPOXY INJECTION CRACK REPAIR

Description: This item shall consist of rebonding cracked concrete structures with a two component modified epoxy resin system injected in to the crack under low pressure using continuous positive displacement metering and mixing equipment, as shown on the plans or as directed in accordance with these specifications.

The Contractor shall not perform any repair work without prior approval by the Department for locations, limits, and type of repairs.

Materials: The epoxy resin shall be a pre-qualified material (see attached Appendix A). A Material Certificate and a Certificate of Compliance in accordance with Article 1.06.07 shall accompany each batch or lot of the material delivered to the job site to verify the epoxy resin's conformance with the manufacturer supplied infrared spectroscopy test results. A sample of liquid epoxy resin Components A and B shall be taken and shall consist of one pint per batch of each component represented in each shipment. The samples shall be presented to the Laboratory a minimum of 14 calendar days before incorporation of any of the batch into the work. The Laboratory shall conduct the Infrared Spectroscopy Test on the samples (see attached Appendix A). Each test results shall be compared to the "Pre-qualification Procedures" test results on file with the Laboratory. Two materials are considered to be identical if all of the absorption points agree as to wave length and relative magnitude of the peaks in comparison with the other points of absorptions.

A batch of each component will be defined as that of material which has been subjected to the same unit chemical or physical mixing process intended to make the final product substantially uniform.

Each component shall be packaged in steel containers not larger than 5 gallons in volume. The containers shall have lug type crimp lids with ring seals, shall be new, shall not be less than 0.024-inch nominal thickness, and shall be well sealed to prevent leakage. If a lining is used in the containers, it shall be of such character as to resists any action by the components. Each container shall be clearly labeled with the description (Component A or B), the manufacturer's name, date of manufacture, batch number, and the following warning:

> ***CAUTION:*** *This material will cause sever dermatitis if it is allowed to come in contact with the skin or eyes. Use gloves and protective creams on the hands. Should this material contact skin, wash thoroughly with soap and water. Do not attempt to remove this material from skin with solvents. If any gets in the eyes, flush for 10 minutes with water and secure immediate medical attention.*

Any material which shows evidence of crystallization or a permanent increase in viscosity or settling of pigments which cannot be readily redispersed with a paddle shall not be used.

Construction Methods: A survey shall be undertaken by the Department on the areas designated on the plans to determine the exact limits and location of the repair areas under this item. Cracks less than $^1/_8$" in width need not be repaired under this item.

At the time of mixing, Components A and B and the substrate temperature shall be between 50°F and 85°F, unless the material has been prequalified at a temperature less than 77°F, in which case this lesser temperature shall govern the use of the material. Any heating of the adhesive components shall be done by application of the indirect heat. Immediately prior to filling the tanks of the mixing equipment, each component shall be thoroughly stirred with a paddle. Separate paddles shall be used to stir each component.

Prior to sealing, the crack shall be cleaned free of dust, silt and any other material which would impair bonding. Cleaning shall be done with oil-free compressed air jets or preferably by vacuum cleaning with an industrial vacuum cleaner.

Injection ports shall be inserted in the cracks at intervals recommended by the epoxy manufacturer. The Contractor may use either surface or insertable injection ports, whichever is recommended by the epoxy manufacturer. Spacing of the ports shall be such that the injected adhesive will substantially fill the crack without excessive waste. The spacing of the ports shall be adjusted as the injection process progresses in order to meet this requirement.

Drilling of the injection ports shall be done with a hollow drill bit to which vacuum is applied with an industrial vacuum cleaner. The Contractor shall avoid reinforcing steel during drilling operations. A pachometer may be used to located and avoid reinforcing steel.

The surface of the crack between ports shall be sealed with tape and/or temporary surface sealant which is capable of retaining the epoxy adhesive in the crack during pressure injection and shall remain in place until the epoxy adhesive has hardened. Sealant tape and/or other temporary surface sealant shall be removed when no longer required and any spillage of epoxy shall be removed. No cleanup of surfaces not generally viewed by the public will be required unless the surface sealant will interfere with subsequent surface treatments.

Epoxy adhesive shall be pumped into the cracks through the injection ports. The pump, hose, injections gun and appurtenances shall properly proportion and mix the epoxy and shall be capable of injecting the epoxy at a sufficient rate and pressure to completely fill all designated cracks. A suitable gasket shall be used on the head of the injection gun to prevent the adhesive from running down the face of the concrete. Pumping pressure shall be kept as low as practicable.

The temperature of the concrete shall not be less than 50°F at the time epoxy is injected, unless the epoxy has been prequalified at a lower temperature as hereinbefore provided, in which case the lower temperature shall govern.

For a crack with a uniform thickness, the epoxy adhesive shall be forced into the first port at one end of the crack until adhesive runs in substantial quantity from the next adjacent port. The first port shall then be sealed and injection shall commence at the next port. Injection shall then continue from port to port in this manner until the crack is fully injected.

Cracks with varying thickness shall have the epoxy adhesive forced into the port at the widest gap in the crack until adhesive runs in substantial quantity from the two adjacent ports. The first port shall then be sealed and injection shall commence at the adjacent port corresponding to the shorter side of the crack. Injection shall then continue from port to port in this manner until the shorter side of the crack is fully injected. Similarly, injection shall continue from port to port on the longer side of the crack, beginning with the port that was filled with epoxy adhesive but not sealed, until the crack is fully injected.

For slanting or vertical cracks, pumping shall start at the lower end of the crack. Where approximately vertical and horizontal cracks intersect, the vertical crack below the intersection shall be injected first. The ports shall be sealed by removing the fitting, filling the void with epoxy and covering with tape or surface sealant.

Before starting injection work and at 2-hour intervals during injection work, whenever requested by the Department, a 3 fluid-ounce sample of mixed epoxy shall be taken from the injection gun. Should these samples show any evidence of improper proportioning or mixing, injection work shall be suspended until the equipment or procedure are corrected.

Samples obtained above shall be used directly, without further stirring, to make test pieces for the Slant Shear Strength on Dry Concrete. One test piece shall be made at the beginning, the middle, and the end of daily operations. The samples shall be allowed to cure for 7 days in the "Concrete Cylinder Curing Box". On the 7^{th} day, the samples shall be removed to the Laboratory and tested in accordance with the requirement for the Slant Shear Strength (see attached Appendix A).

Each sample shall be numbered consecutively and dated (with a waterproof marker) and shall note which sample represents which part of the structure.

Technical Advisor: The Contractor shall provide the Department with a notarized statement showing a specific record of epoxy injections actually made by the Contractor and/or a specific record of training of his employees in epoxy injection repairs taught by the epoxy manufacturer. If the statement is not produced or is deemed insufficient by the Department, the contractor shall obtain the services of a Technical Advisor who is employed by the epoxy manufacturer. The Technical Advisor shall assist the Department and the Contractor in the correct use of the injection resin. The Advisor shall be a qualified representative, approved by the Department, and shall be at the site of the work when the work begins in connections with the epoxy injection, and at such other times as the Department may request until completion of work under this item.

Method of Measurement: This work will be measured by the total length of all cracks, which have been designated by the Department to be injected and which were subsequently filled with epoxy, completed and accepted by the Department.

Where a crack designated for repair under this item extends around a corner of a concrete member, the length of crack on both faces will be measured.

Basis of Payment: This work will be paid for as outlined in Part 2 Technical Provisions. Cleaning and preparing cracks to be epoxy injected, all materials, equipment, tools, labor and clean up incidental thereto shall be included in the cost of the work under this item.

Pay Item	**Pay Unit**
Epoxy Injection Crack Repair	L.F.

APPENDIX A

Prequalification Procedure

The Prequalification Procedure shall consist of the following test procedures on the mixed epoxy resin at a temperature of 77oF, unless the Contractor desires to use the material at a lower temperature than 50oF, in which case the lower temperature shall be used to condition the material and test pieces.

Test: **Viscosity**
Requirement: 900 centipoise, maximum at 77^{o}F (62^{o}F)
4000 centipoise, maximum at any test temperature
Test Method: ASTM D2393

Test: **Gel Time (Pot Life)**
Requirement: 4 to 60 minutes
Test Method:

A. Apparatus:
   1. Unwaxed paper cups, 8 oz, 2 inches 4 $^{1}/_{4}$" at base.
   2. Wooden tongue depressor with ends cut square.
   3. Stainless steel spatula with 6"x1" blade and with end cut square.
   4. Stopwatch, 1 second or smaller divisions.
   5. Balance, 0.1 gram divisions.

B. Test Procedure:
   1. Condition both Components A and B to required temperature (62^{o}F).
   2. Measure proper volumes of well mixed Components A and B into an 8-oz. unwaxed cup to yield total mass of 60 (62.0) grams.
   3. Start stopwatch immediately and mix components for 60 seconds, stirring with a wooden tongue depressor, taking care to scrape the sides and bottom of the cup periodically.
   4. Place the sample at the required temperature (62^{o}F) on a wooden bench top which is free of excessive drafts.
   5. Probe the mixture with the tongue depressor once every 30 seconds starting 4 minutes from the time of mixing.
   6. The time at which a soft stringy mass forms in the cup is the gel time.

Test: **Slant Shear Strength on Wet Concrete**
Requirement: 1700 psi, minimum after 7 days of cure in air at the required temperature (62^{o}F).

Test: **Slant Shear Strength on Dry Concrete**
Requirement: 4500 psi, minimum after 7 days of cure in air at the required temperature (62^{o}F).

Test: Slant Shear Strength

A. Materials
   1. Ottawa sand, ASTM C109
   2. Portland cement Type II
   3. Water

B. Apparatus:
   1. Suitable mold to make diagonal concrete mortar block with a square baseof 2-inch sides, and having one 2”x4” diagonal face, starting about ¾” above the base. The diagonal faces of two such blocks are bonded together producing a block of 2”x2”x5” dimensions.
   2. Blocks are made from the following composition:
      - Ottawa sand, ASTM C109 30.1 lbs
      - Portland Cement Type II 12.1 lbs
      - Water 4.8 lbs

      Cure blocks 28 days in a fog room. Dry and lightly sandblast diagonal faces.
   3. Suitable test press.

C. Test Procedure:

Condition the components for 4 hours at the required temperature (62^oF). Without entrapping air, stir the separate components for 30 seconds and place the proper volumes of each component on a plate and mix with a spatula for 60 seconds. Apply a coat approximately 0.010-inch thick to each diagonal surface. Place four $^1/_8$” square pieces of shim stock 0.012” thick on one block to control final film thickness.

Before pressing the coated surface together, leave the blocks so that the coated surfaces are horizontal until the epoxy reacts slightly to prevent excessive flow. Press diagonal surfaces of each block together by hands and remove excess epoxy adhesive.

Align the blocks so that the ends and sides are square and form a 2”x2”x5” block. Use blocks of wood or metal against each 2”x2” end to keep the diagonal faces from slipping until epoxy hardens.

After the required cure time, apply a suitable capping compound to each of the 2”x2” suitable testing apparatus at the rate of 5000 lbs/min until failure.

Report results in pounds per square inch = ¼ x (Load in Pounds)

For wet shear strength, soak another set of block in water for 24 hours at the require temperature (62^oF). Remove and wipe off excessive water. Prepare, cure and test sample according to above test procedure.

Test: Tensile Strength

Requirement: 4500 psi, minimum

Test: Elongation
Requirement: 15% maximum
Test Method: Tensile Strength and Elongation
A. Apparatus:
1. Leveling table about 12”x8” with removable rim ¼” thick by ½” wide.
2. Mylar or similar plastic sheeting 0.004” thick.
3. Air circulation oven capable of maintaining 158^{o}F (63^{o}F).
4. Cutting die, Figure 1.
5. Thickness gauge, $^{1}/_{8}$”.
6. Release agent, non-silicone type.

B. Procedure:
1. Place mylar sheet on leveling table.
2. Coat inside edge and bottom of rim with release agent and secure table with screws.
3. Level the table.
4. Mix sufficient volume of well-mixed Component A and well-mixed Component B in the proper volumes so as to be able to form a layer 1/8” deep when placed inside of the ring on the leveling table.
5. Introduce as few bubbles as possible during mixing.
6. Flush surface of epoxy with a heat gun or Bunsen burner to remove air bubbles on surface. Repeat if necessary.
7. Allow the specimen to cure for 18 hours at the required temperature (62^{o}F).
8. Remove specimen from table and strip off mylar sheet. Cure specimen at 158^{o}F (63^{o}F) for 5 hours
9. Allow specimen to cool to the required temperature and cut specimens using using cutting die shown on Figure 1.
10. Proceed as specified in ASTM d638 using 0.2 inch/minute test rating, and 1” gauge length.

Test: Infrared Curve
Requirement: Infrared Curved shall be obtained of Components A and B
Test method: Recording Spectrophotometer
A. Apparatus:
1. Perkin-Elmer Model 137-B Infracord Spectrophotometer, automatic recording system from 2.5 to 15 microns, with a two-speed recorder. Comparable results can be obtained by other double-beam recording spectrophotometers with similar resolution.
2. Disk holder for a 1”-diameter disk.
3. Two sodium chloride crystal disks, one inch in diameter.
4. Sorvall SS-3 Automatic Superspeed Centrifuge, or a comparable centrifuge, which is able to separate the liquid and solid phases of the epoxy components without previous dilution with solvents.

B. Procedure:
   1. Place about 15 grams of Component A into a stainless centrifuge tube.
   2. Counterbalance with Component B in a second centrifuge tube.
   3. Centrifuge the two components at 17.000rpm until there is a supernatant liquid layer present in each tube. This takes 20 – 30 minutes.
   4. Place a drop of Component A liquid layer on a sodium chloride disk.
   5. Place another sodium chloride disk over the drop, rotate and press down until the liquid has flowed into a uniform layer of proper thickness between the two sodium chloride disks.
   6. Place the disk in the holder and run an absorption curve with the infrared spectrophotometer.
   7. More or less liquid may be used between the disks so as to produce a maximum absorption of 0.7 to 1.0 for the strongest absorption point on the above.
   8. Clean disks with toluene and dry.
   9. Repeat steps 4 through 8 with the liquid layer from Component B.
   10. Record each curve in order that they may be used for comparison purposed to lots of material delivered to the job site.

ITEM #0969064A – CONSTRUCTION FIELD OFFICE, LARGE

Description: Under the item included in the bid document, adequate weatherproof office quarters with related furnishings, materials, equipment and other services, shall be provided by the Contractor for the duration of the work, and if necessary, for a close-out period determined by the Engineer. The office, furnishings, materials, equipment, and services are for the exclusive use of CTDOT forces and others who may be engaged to augment CTDOT forces with relation to the Contract. The office quarters shall be located convenient to the work site and installed in accordance with Article 1.08.02. This office shall be separated from any office occupied by the Contractor. Ownership and liability of the office quarters shall remain with the Contractor.

Furnishings/Materials/Supplies/Equipment: All furnishings, materials, equipment and supplies shall be in like new condition for the purpose intended and require approval of the Engineer.

Office Requirements: The Contractor shall furnish the office quarters and equipment as described below:

Description \ Office Size	Small	Med.	Large	Extra Large
Minimum Sq. Ft. of floor space with a minimum ceiling height of 7 ft.	400	400	1000	2000
Minimum number of exterior entrances.	2	2	2	2
Minimum number of parking spaces.	7	7	10	15

Office Layout: The office shall have a minimum square footage as indicated in the table above, and shall be partitioned as shown on the building floor plan as provided by the Engineer.

Tie-downs and Skirting: Modular offices shall be tied-down and fully skirted to ground level.

Lavatory Facilities: For field offices sizes Small and Medium the Contractor shall furnish a toilet facility at a location convenient to the field office for use by Department personnel and such assistants as they may engage; and for field offices sizes Large and Extra Large the Contractor shall furnish two (2) separate lavatories with toilet (men and women), in separately enclosed rooms that are properly ventilated and comply with applicable sanitary codes. Each lavatory shall have hot and cold running water and flush-type toilets. For all facilities the Contractor shall supply lavatory and sanitary supplies as required.

Windows and Entrances: The windows shall be of a type that will open and close conveniently, shall be sufficient in number and size to provide adequate light and ventilation, and shall be fitted with locking devices, blinds and screens. The entrances shall be secure, screened, and fitted with a lock for which four keys shall be furnished. All keys to the construction field office shall be furnished to the Department and will be kept in their possession while State personnel are using the office. Any access to the entrance ways shall meet applicable building codes, with appropriate handrails. Stairways shall be ADA/ABA compliant and have non-skid tread surfaces. An ADA/ABA compliant ramp with non-skid surface shall be provided with the Extra-Large field office.

Lighting: The Contractor shall equip the office interior with electric lighting that provides a minimum illumination level of 100 foot-candles at desk level height, and electric outlets for each desk and drafting table. The Contractor shall also provide exterior lighting that provides a minimum illumination level of 2 foot-candles throughout the parking area and for a minimum distance of 10 ft. on each side of the field office.

Parking Facility: The Contractor shall provide a parking area, adjacent to the field office, of sufficient size to accommodate the number of vehicles indicated in the table above. If a paved parking area is not readily available, the Contractor shall construct a parking area and driveway consisting of a minimum of 6 inches of processed aggregate base graded to drain. The base material will be extended to the office entrance.

Field Office Security: Physical Barrier Devices - This shall consist of physical means to prevent entry, such as: 1) All windows shall be barred or security screens installed; 2) All field office doors shall be equipped with dead bolt locks and regular day operated door locks; and 3) Other devices as directed by the Engineer to suit existing conditions.

Electric Service: The field office shall be equipped with an electric service panel to serve the electrical requirements of the field office, including: lighting, general outlets, computer outlets, calculators etc., and meet the following minimum specifications:

A. 120/240 volt, 1 phase, 3 wire
B. Ampacity necessary to serve all equipment. Service shall be a minimum 100 amp dedicated to the construction field office.
C. The electrical panel shall include a main circuit breaker and branch circuit breakers of the size and quantity required.
D. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed at each computer workstation location.
E. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed, for use by the Telephone Company.
F. Additional 120-volt circuits and duplex outlets as required meeting National Electric Code requirements.
G. One exterior (outside) wall mounted GFI receptacle, duplex, isolated ground, 120 volt, straight blade.
H. After work is complete and prior to energizing, the State's CTDOT electrical inspector, must be contacted at 860-594-2240. (Do Not Call Local Town Officials)
I. Prior to field office removal, the CTDOT Office of Information Systems (CTDOT OIS) must be notified to deactivate the communications equipment.

Heating, Ventilation and Air Conditioning (HVAC): The field office shall be equipped with sufficient heating, air conditioning and ventilation equipment to maintain a temperature range of 68^{o}-80^{o} Fahrenheit within the field office.

Telephone Service: The Contractor shall provide telephone service with unlimited nation-wide calling plan. For a Small, Medium and Large field office this shall consist of the installation of two (2) telephone lines: one (1) line for phone/voice service and one (1) line dedicated for the facsimile machine. For an Extra-Large field office this shall consist of four (4) telephone lines: three (3) lines for phone/voice service and one (1) line dedicated for facsimile machine. The Contractor shall pay all charges.

Data Communications Facility Wiring: Contractor shall install a Category 6 568B patch panel in a central wiring location and Cat 6 cable from the patch panel to each PC station, Smart Board location, Multifunction Laser Printer/Copier/Scanner/Fax, terminating in a (Category 6 568B) wall or surface mount data jack. The central wiring location shall also house either the data circuit with appropriate power requirements or a category 5 cable run to the location of the installed data circuit. The central wiring location will be determined by the CTDOT OIS staff in coordination with the designated field office personnel as soon as the facility is in place.

For Small, Medium and Large field offices the Contractor shall run a CAT 6 LAN cable a minimum length of 25 feet for each computer to LAN switch area leaving an additional 10 feet of cable length on each side with terminated RJ45 connectors. For an Extra-Large field office the Contractor shall run CAT 6 LAN cables from workstations, install patch panel in data circuit demark area and terminate runs with RJ45 jacks at each computer location. Terminate runs to patch panel in LAN switch area. Each run / jack shall be clearly labeled with an identifying Jack Number.

The Contractor shall supply cables to connect the Wi-Fi printer to the Contractor supplied internet router and to workstations as needed. These cables shall be separate from the LAN cables and data Jacks detailed above for the Department network.

The installation of a data communication circuit between the field office and the CTDOT OIS in Newington will be coordinated between the CTDOT District staff, CTDOT OIS staff and the local utility company once the Contractor supplies the field office phone numbers and anticipated installation date. The Contractor shall provide the field office telephone number(s) to the CTDOT Project Engineer within 10 calendar days after the signing of the Contract as required by Article 1.08.02. This is required to facilitate data line and computer installations.

Additional Equipment, Facilities and Services: The Contractor shall provide at the field Office at least the following to the satisfaction of the Engineer:

Furnishing Description	Office Size			
	Small	Med.	Large	Extra Large

	Quantity			
Office desk (2.5 ft. x 5 ft.) with drawers, locks, and matching desk chair that have pneumatic seat height adjustment and dual wheel casters on the base.	1	3	5	8
Standard secretarial type desk and matching desk chair that has pneumatic seat height adjustment and dual wheel casters on the base.	-	-	-	1
Personal computer tables (4 ft. x 2.5 ft.).	2	3	5	8
Drafting type tables (3 ft. x 6 ft.) and supported by wall brackets and legs; and matching drafters stool that have pneumatic seat height adjustment, seat back and dual wheel casters on the base.	1	1	1	2
Conference table, 3 ft. x 12 ft.	-	-	-	1
Table – 3 ft. x 6 ft.	-	-	-	1
Office Chairs.	2	4	8	20
Mail slot bin – legal size.	-	-	1	1
Non-fire resistant cabinet.	-	-	2	4
Fire resistant cabinet (legal size/4 drawer), locking.	1	1	2	3
Storage racks to hold 3 ft. x 5 ft. display charts.	-	-	1	2
Vertical plan racks for 2 sets of 2 ft. x 3 ft. plans for each rack.	1	1	2	2
Double door supply cabinet with 4 shelves and a lock – 6 ft. x 4 ft.	-	-	1	2
Case of cardboard banker boxes (Min 10 boxes/case)	1	1	2	3
Open bookcase – 3 shelves – 3 ft. long.	-	-	2	2
White Dry-Erase Board, 36” x 48”min. with markers and eraser.	1	1	1	1
Interior partitions – 6 ft. x 6 ft., soundproof type, portable and freestanding.	-	-	6	6
Coat rack with 20 coat capacity.	-	-	-	1
Wastebaskets - 30 gal., including plastic waste bags.	1	1	1	2
Wastebaskets - 5 gal., including plastic waste bags.	1	3	6	10
Electric wall clock.	-	-	-	2
Telephone.	1	1	1	-
Full size stapler 20 (sheet capacity, with staples)	1	2	5	8
Desktop tape dispensers (with Tape)	1	2	5	8
8 Outlet Power Strip with Surge Protection	3	4	6	9
Rain Gauge	1	1	1	1
Business telephone system for three lines with ten handsets, intercom capability, and one speaker phone for conference table.	-	-	-	1
Mini refrigerator - 3.2 c.f. min.	1	1	1	1
Hot and cold water dispensing unit. Disposable cups and bottled water shall be supplied by the Contractor for the	1	1	1	1

duration of the project.				
Microwave, 1.2 c.f. , 1000W min.	1	1	1	1
Fire extinguishers - provide and install type and *number to meet applicable State and local codes for size of office indicated, including a fire extinguisher suitable for use on a computer terminal fire.	*	*	*	*
Electric pencil sharpeners.	1	2	2	2
Electronic office type printing calculators capable of addition, subtraction, multiplication and division with memory and a supply of printing paper.	1	1	2	4
Small Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under Computer Hardware and Software.	1	1		
Large Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under Computer Hardware and Software.			1	1
Field Office Wi-Fi Connection as specified below under Computer Hardware and Software	1	1	1	1
Wi-Fi Printer as specified below under Computer Hardware and Software.	1	1	1	1
Digital Camera as specified below under Computer Hardware and Software.	1	1	3	3
Video Projector as specified below under Computer Hardware and Software.	-	-	-	1
Smart Board as specified below under Computer Hardware and Software.	-	-	-	1
Infrared Thermometer, including annual third party certified calibration, case, and cleaning wipes.	1	1	1	2
Concrete Curing Box as specified below under Concrete Testing Equipment.	1	1	1	1
Concrete Air Meter and accessories as specified below under Concrete Testing Equipment as specified below. Contractor shall provide third party calibration on a quarterly basis.	1	1	1	1
Concrete Slump Cone and accessories as specified below under Concrete Testing Equipment.	1	1	1	1
First Aid Kit	1	1	1	1
Flip Phones as specified under Computer Hardware and Software.	-	-	-	-
Smart Phones as specified under Computer Hardware and Software.	-	-	-	-

The furnishings and equipment required herein shall remain the property of the Contractor. Any supplies required to maintain or operate the above listed equipment or furnishings shall be provided by the Contractor for the duration of the project.

Computer Hardware and Software: Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors, and Smart Board(s) as well as associated hardware and software, must meet the requirements of this specification as well as the latest minimum specifications posted, as of the project advertising date, at Departments web site http://www.ct.gov/dot/cwp/view.asp?a=1410&q=563904

Within 10 calendar days after the signing of the Contract but before ordering/purchasing the Wi-Fi Printer (separate from the Multifunction Laser Printer/Copier/Scanner/Fax), Field Office Wi-Fi, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projector(s) and Smart Board(s) as well as associated hardware, the Contractor must submit a copy of their proposed order(s) with catalog cuts and specifications to the Administering CTDOT District for review and approval. The Wi-Fi Printer, Wi-Fi Router, Flip Phones, Smart Phones, digital cameras, Projector(s) and Smart Board(s) will be reviewed by CTDOT District personnel. The Multifunction Laser Printer/Copier/Scanner/Fax will be reviewed by the CTDOT OIS. The Contractor shall not purchase the hardware, software, or services until the Administering CTDOT District informs them that the proposed equipment, software, and services are approved. The Contractor will be solely responsible for the costs of any hardware, software, or services purchased without approval.

The Contractor and/or their internet service provider shall be responsible for the installation and setup of the field office Wi-Fi, Wi-Fi printer, and the configuration of the wireless router as directed by the Department. Installation will be coordinated with CTDOT District and Project personnel.

After the approval of the hardware and software, the Contractor shall contact the designated representatives of the CTDOT administering District, a minimum of 2 working days in advance of the proposed delivery or installation of the Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors and Smart Board(s), as well as associated hardware, software, supplies, and support documentation.

The Contractor shall provide all supplies, paper, maintenance, service and repairs (including labor and parts) for the Wi-Fi printers, copiers, field office Wi-Fi, fax machines and other equipment and facilities required by this specification for the duration of the Contract. All repairs must be performed with-in 48 hours. If the repairs require more than a 48 hours then an equal or better replacement must be provided.

Once the Contract has been completed, the hardware and software will remain the property of the Contractor.

First Aid Kit: The Contractor shall supply a first aid kit adequate for the number of personnel expected based on the size of the field office specified and shall keep the first aid kit stocked for the duration that the field office is in service.

Rain Gauge: The Contractor shall supply install and maintain a rain gauge for the duration of the project, meeting these minimum requirements. The rain gauge shall be installed on the top of a post such that the opening of the rain gauge is above the top of the post an adequate distance to avoid splashing of rain water from the top of the post into the rain gauge. The Location of the rain gauge and post shall be approved by the Engineer. The rain gauge shall be made of a durable material and have graduations of 0.1 inches or less with a minimum total column height of 5 inches. If the rain gauge is damaged the Contractor shall replace it prior to the next forecasted storm event at no additional cost.

Concrete Testing Equipment: If the Contract includes items that require compressive strength cylinders for concrete, in accordance with the Schedule of Minimum Testing Requirements for Sampling Materials for Test, the Contractor shall provide the following equipment.

A) Concrete Cylinder Curing Box – meeting the requirements of Section 6.12 of the Standard Specifications.

B) Air Meter – The air meter provided shall be in good working order and meet the requirements of AASHTO T 152.

C) Slump Cone Mold – Slump cone, base plate, and tamping rod shall be provided in like-new condition and meet the requirements of AASHTO T119, Standard Test Method for Slump of Hydraulic-Cement Concrete.

All testing equipment will remain the property of the Contractor at the completion of the project.

Insurance Policy: The Contractor shall provide a separate insurance policy, with no deductible, in the minimum amount of five thousand dollars ($5,000) in order to insure all State-owned data equipment and supplies used in the office against all losses. The Contractor shall be named insured on that policy, and the Department shall be an additional named insured on the policy. These losses shall include, but not be limited to: theft, fire, and physical damage. The Department will be responsible for all maintenance costs of Department owned computer hardware. In the event of loss, the Contractor shall provide replacement equipment in accordance with current Department equipment specifications, within seven days of notice of the loss. If the Contractor is unable to provide the required replacement equipment within seven days, the Department may provide replacement equipment and deduct the cost of the equipment from monies due or which may become due the Contractor under the Contract or under any other contract. The Contractor's financial liability under this paragraph shall be limited to the amount of the insurance coverage required by this paragraph. If the cost of equipment replacement required by this paragraph should exceed the required amount of the insurance coverage, the Department will reimburse the Contractor for replacement costs exceeding the amount of the required coverage.

Maintenance: During the occupancy by the Department, the Contractor shall maintain all facilities and furnishings provided under the above requirements, and shall maintain and keep the office quarters clean through the use of weekly professional cleaning to include, but not limited to, washing & waxing floors, cleaning restrooms, removal of trash, etc. Exterior areas shall be mowed and clean of debris. A trash receptacle (dumpster) with weekly pickup (trash removal)

shall be provided. Snow removal, sanding and salting of all parking, walkway, and entrance ways areas shall be accomplished during a storm if on a workday during work hours, immediately after a storm and prior to the start of a workday. If snow removal, salting and sanding are not completed by the specified time, the State will provide the service and all costs incurred will be deducted from the next payment estimate.

Method of Measurement: The furnishing and maintenance of the construction field office will be measured for payment by the number of calendar months that the office is in place and in operation, rounded up to the nearest month.

There will not be any price adjustment due to any change in the minimum computer hardware and software requirements.

Basis of Payment: The furnishing and maintenance of the Construction Field Office will be paid for at the Contract unit price per month for "Construction Field Office, (Type)," which price shall include all material, equipment, labor, service contracts, licenses, software, repair or replacement of hardware and software, related supplies, utility services, parking area, external illumination, trash removal, snow and ice removal, and work incidental thereto, as well as any other costs to provide requirements of this specified this specification.

Pay Item	Pay Unit
Construction Field Office, (Type)	Month

NOTICE TO CONTRACTOR – EARLY SUBMITTALS

The Contractor is hereby advised that the Department has identified the potential need to order certain materials and equipment, and thereby submit certain submittals for approval early in the construction process to ensure the Project is completed within the allowable Contract Time. Submittals shall be in accordance with Form 816 Article 1.20-1.05.02. The following items have been identified as possibly requiring early ordering thereby requiring early submission of shop drawings and product data, including color selection charts and samples:

General

1. General Railroad Liability Insurance
2. Railroad safety Plan
3. Phasing Plan (Refer to NOTICE TO CONTRACTOR – PROJECT PHASING REQUIREMENTS)
4. Baseline Critical Path Schedule
5. Health and Safety Plan

Special Provisions/Contract Items

6. ITEM #0971001A - MAINTENANCE AND PROTECTION OF TRAFFIC
7. ITEM #1005600A - LED LUMINAIRE

CSI-Formatted Specifications

8. SECTION 03 41 01 – PRECAST STRUCTURAL CONCRETE
9. SECTION 03 41 05 – PLATFORM SECTION (Items: Structural steel; precast platform panels)
10. SECTION 34 82 10 – STEEL LAMINATED ELASTROMERIC BEARINGS

The following items have been identified as possibly requiring early submission for purposes of project coordination and project work scheduling:

1. Contractor's Submittal Schedule
2. Disposal of Controlled Material

Items requiring approval by Metro-North Railroad may require early submittals due to the extended review periods allowed to those agencies. Refer to NOTICE TO CONTRACTOR - METRO-NORTH RAILROAD SUBMITTALS for additional information.

The lists above are not intended to be all-inclusive and do not relieve the Contractor from coordinating the activities of its subcontractors and suppliers. The Contractor will not be permitted to perform any physical work on the Project without the approval of the required submittals. Failure to properly plan for long lead items within the Contract schedule will not be justification for additional construction time.

It is recommended that the Contractor identify early in the construction sequencing process the subcontractors and suppliers associated with long lead-time items and submit the appropriate shop drawings and supporting data, including color selection charts and samples, for review upon Notice to Proceed.

NOTICE TO CONTRACTOR – SUBMITTALS

Submittals shall be in accordance with Form 816 Article 1.20-1.05.02.

Submittal Preparation and Processing:

The Contractor shall provide the Designer with complete submittal packages (Product Data, Shop Drawings, Samples, and Quality Assurance Submittals, as applicable) for individual elements of Project work for a concurrent review of all information. Incomplete submittal packages will be returned to the Contractor without being reviewed.

Transmittal of Submittals:

Unless otherwise stipulated, all submittals requiring review for conformance with the Contract shall be transmitted electronically to the Designer: Parsons Brinckerhoff, 500 Winding Brook Drive, Glastonbury, CT 06033, Attention: Mr. Thomas Laliberte, P.E.

Electronic copies of all transmittal letters shall be sent to the Connecticut Department of Transportation Design and Construction representatives as well as Metro-North Railroad.

At the time the foregoing submission is made to the Designer, electronic copies of all submittals requiring Metro-North Railroad review for conformance with the Contract shall be routed directly to Metro-North Railroad. See NOTICE TO CONTRACTOR - METRO-NORTH RAILROAD SUBMITTALS for submittals requiring Metro-North Railroad approval.

Submittals requiring review for conformance with the Contract that shall be electronically submitted directly to the Engineer in lieu of the Designer are listed below. Electronic copies of the transmittal letters shall be sent to the Connecticut Department of Transportation Design representatives and Metro-North Railroad.

1. Concrete Mix Design Certifications.
2. Asphalt Mix Design Certifications
3. Erosion Control Plan and Materials
4. Demolition Plan
5. Disposal Plan
6. Construction Staging Plan
7. Structure Erection Plans including Erection Methods and Procedures, crane lift and rigging plans stamped by a Professional Engineer licensed in the State of Connecticut.
8. Dewatering Connection Plan
9. Maintenance and Traffic Protection Plan
10. Safety and Security Plan
11. Welding (Welder) Certificates
12. Certified Test Reports, Material Certificates, etc. from Form 816 Standard Items (non "A" Items from Bid List)

Submittals requiring review for conformance with the Environmental Contract work that shall be electronically submitted directly to the Assistant District Engineer – for review by Environmental Compliance -- in lieu of the Designer are listed below. Electronic copies of the transmittal letters shall be sent to the Manager of Facilities and Bridges.

1. Health and Safety Plan.
2. Disposal Plan and Site.
3. Lead Abatement Plan.
4. Item No. 0020902A – Lead Compliance for Building Renovation and Demolition
5. Item No. 0101143A – Handling and Disposal of Regulated Items

Additionally, the Contractor shall send submittals e-mail alerts (including product samples) to all reviewers and key personnel. Submittal reviewers and key personnel will be identified at the Pre-Construction Meeting.

Samples: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of choices, submit 4 full sets of the standard and custom choices for the material or product. Where Samples illustrate assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 1 sample (or set, if applicable).

The Designer will return electronic copies marked with action taken and corrections or modifications required. The Designer will return one set of samples marked with the action taken. The set of samples shall be maintained at the Project site when returned.

Maintenance Manuals and Warranties: Maintenance manuals and warranties shall be submitted both electronically and in hard copy form. Refer to NOTICE TO CONTRACTOR – CLOSEOUT DOCUMENTS for further requirements. Maintenance manuals and warranties will not be returned unless they are rejected.

ITEM #0901005A – BOLLARD

Description:

The work under this item shall consist of furnishing and installing concrete-filled steel pipe bollards with durable plastic bollard covers in a concrete footing, of the type specified, at the locations, to the dimensions and details as shown on the plans in accordance with these specifications or as directed by the Engineer. The purpose of the bollard is to protect an electrical control box against incidental damage from motor vehicle strikes.

Materials:

Steel Post, 6-inch I.D. diameter, ASTM Schedule 80, Galvanized in Accordance with ASTM A123.

Plastic Bollard Cover: Polyethylene Thermoplastic (HDPE) tubes with ultra-violet resistance and anti-static properties, nominal thickness 0.25 inches, sized for steel pipe diameters. Cover color is OSHA yellow.

Concrete: Class "C" conforming to Article M.03.

Construction Methods:

The steel post shall have an exposed length of 4'. The post shall be installed to a depth of 3'-9", set in a concrete footing of at least 18" in diameter and 18" deep. In lieu of a footing, the entire hole shall be filled with concrete. If installed in a grass area, the top 6" of the hole shall be backfilled with a comparable material.

The post shall be filled with concrete. The top shall be rounded to a convex surface. No sharp edges, burrs, threads or other defects shall be exposed. The plastic bollard covers should be installed.

Method of Measurement:

This work shall be measured for payment by the number of steel bollards installed and accepted in place.

Basis of Payment:

This work will be paid for at the contract unit price each for "Bollard", which price shall include the steel post, concrete footing, painting, plastic covers all necessary tools, equipment, maintenance, and labor required for installation. Concrete sidewalk shall be paid for by square foot at the contract price.

Pay Item	Pay Unit
Bollard	ea.

INDEX OF CSI FORMATTED SPECIFICATIONS

NOROTON HEIGHTS RAILROAD STATION PLATFORM REPLACEMENT
DARIEN, CONNECTICUT
STATE PROJECT NO. 0301-0170

ADDENDUM NO. 01

NOTE: All the CSI-formatted Specifications listed below make up the Major Lump Sum Item (MLSI) and are included under the Form 816 ITEM #0063521A – RAIL FACILITY UPGRADE (SITE NO.1).